

## Ponds.

In your columns a few of ponds, and the in that condition? I blem of the whys and What is the cause of it accomplish? How or any fish? What is the pond's working? ars on Lake Twitchell, acks, during the latter of September. Last was exceedingly bad; seen any lake in such orkings were all over 6ft. tall, growing to e water. They were of color, and of a thick, the shores would be ashed ashore.

low and sluggish, and the fisherman with a y had no visible traces upon, and they were It was their custom year they would even his inactivity?

A. L. JORDAN.

ference of opinion in all through the water during July and August when the water is poor, as is usually the ough the FOREST AND s, and if they do have kind of a lure. Some kes fermenting; others ooming in the bottom ow from trees coming ht on this point that I L. O. CRANE.

ol. VI., p. 341, a para- of ponds, from which

varieties *Nostochaccae*, occasionally produce by n the so-called 'water form the water into a Sometimes this 'water fish in a pond; in other i frequently the fish are no experiments have ain which of the algae ceise an injurious in- ery desirable that care- n this respect."

similar effects are pro- it is usually stated that s float at the surface ously until fertilization hen they sink to the ment.

for such a purpose, and that spores were found except those produced by the fresh-water sponge.

J. S. VAN CLEEF.

## The Grayling.

(*Thymallus lewisi*).

THE grayling of Montana exists only in the three forks of the Missouri River—the Jefferson, Madison and Gallatin rivers and their tributaries. The first real effort toward its artificial culture was inaugurated by the U. S. Fish Commission during the past spring at Red Rock Lake, the headwaters of the Jefferson, an auxiliary station connected with the Bozeman (Montana) station. This sub-station is situated in Montana at the foot of the Continental Divide, while on the opposite side of the Divide, in Idaho, an auxiliary station for the collection of eggs of the cut-throat or Rocky Mountain trout was operated at the same time at Henry's Lake, the headwaters of Snake River.

As these sub-stations were under my supervision, my attention was naturally directed to the history of the grayling in Montana, and especially to its occurrence in the Jefferson and its tributaries, where it is especially abundant. Knowing that Lewis and Clark ascended the Jefferson to its source in the Rocky Mountains in 1805, I thought it extremely probable that those remarkably close observers had mentioned the existence of this beautiful and well-marked species. Upon investigation I found my surmise to be correct.

On page 545 of Dr. Elliot Coues' edition (1893) of the "Lewis and Clark Expedition," and page 411 of the original Biddle edition of 1814, I found the following:

"Toward evening we formed a drag of bushes, and in about two hours caught 528 very good fish, most of them large trout. Among them we observed for the first time ten or twelve trout of a white or silvery color, except on the back and head, where they are of a bluish cast; in appearance and shape they resemble exactly the speckled trout, except that they are not so large, though the scales are much larger; the flavor is equally good."

A foot note of Dr. Coues to this paragraph reads as follows:

"This species remains to be identified. The description indicates the *Oncorhynchus nerka*, the common blue-backed salmon of the Columbia and its tributaries, extensively used for canning, and ranking in commercial value next to the quinnat or king salmon, *O. chowicha* or *O. quinnat*. It attains a weight of 4 to 8lbs, and is usually of the color said; but the males in the fall become tinged with red. This salmon is also called *O. lycaodon*, and is one of the five well-established species of its genus; they are collectively known as Pacific salmon. But the genus *Oncorhynchus* is not represented in any Atlantic waters."

The locality where these fish were taken was near the headwaters of the Jefferson, where Lewis and Clark abandoned their canoes and crossed the Continental Divide on horses. At this point the grayling is abundant and coexists with the cut-throat trout almost to the exclusion of any other species.

There is not the least doubt in my mind that the foregoing description was intended for the grayling. As Dr. Coues truly says: "The genus *Oncorhynchus* is not represented in any Atlantic waters." Then the size, "not so large" as the trout, shows that some other species was meant. The description could not well apply to any other fish than the grayling, not even to

ducks and not divers ooze through their other life, as well as to of water plants and o ing the original stock are derived will give orous feeding. All to them, raw or cooked, two curled feathers or for no other wild du "Cayuga black ducks" to be "improved" wild and curly tail feathers breeding. They are pedigree.

As one who, for ye would like a chance to pintails and wood d tadpoles when they ca other bird, wild or do but require, some ani more natural than tha they can get them?

Yet the mallard, bla back, redhead, pintail tity of fish. They ma the mammals, the ho which man is fond, among the ducks. W tadpoles to a brood "tittlebats" loose in th woodies go for them. them if I didn't come wog was just the th menu, and I loved t them.

Once, after turning broods of different d of gobbling them, I th of a broiling steak n little ducks had been d and water cress, with adult wood duck will eats more of other thi duck weed, water cress

The food of the old ly a little clam with "duck clam," but they

The true fish-eating also sheldrakes in An is a different bird. species, in which the creamy below, while t called "goosander"); the little hooded mer and "crested sheldrak the side of a wood du low trees high from some black and whit raise at will.

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It is usually stated that plants float at the surface cloudy until fertilization when they sink to the bottom.

and is Dr. Berthold Benberg.

to fully your question in "blooming" of ponds, but "working" or "clouding."

does not always result from a fact that it results from water lilies of the moun-

blooming of the water evidence of an aquatic weed or in shallow waters of that

opportunity for observation water abounds in aquatic where the water is not over abundant in a large amount water is deeper there is, as small life.

is, with which I am quite of a single case where out spores of any kind

who is quite an eminent years ago or more, took that caused the clouding of the Catskills, Balsam and in both cases we found by the spores of the fresh-water in both lakes.

is, like most of the lakes being spring water, and a depth of about 2 ft. or existed in considerable not over 2 or 3 in. in and when taken in the it to be nothing of them. is found to extend down by millions of spores sponges and as I under-

follows:

"This species remains to be identified. The description indicates the *Oncorhynchus nerka*, the common blue-backed salmon of the Columbia and its tributaries, extensively used for canning, and ranking in commercial value next to the quinnat or king salmon, *O. tshawytscha* or *O. quinnat*. It attains a weight of 4 to 8 lbs., and is usually of the color said; but the males in the fall become tinged with red. This salmon is also called *O. tshawytscha*, and is one of the five well-established species of its genus; they are collectively known as Pacific salmon. But the genus *Oncorhynchus* is not represented in any Atlantic waters."

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It is not known where Cuvier's specimen came from, certainly not from Lake Ontario, to which locality it is attributed. The arctic form, *T. signifer*, seems to be distinct from that of Montana and Michigan, which I hold to be identical.

Lewis and Clark were both remarkable for clear, concise and correct descriptions of the animals and plants met with during their wonderful journey, many of which were new to science; but unfortunately others have reaped the honors of their discovery and description. In the matter of the grayling there is presented an opportunity to restore to those intrepid explorers one small tribute of justice and esteem; and at the same time to supplant the name of a foreign naturalist given to an American fish of doubtful locality, half a century after its discovery and description, from its native waters, by the pioneers who blazed the way for the course of empire.

JAMES A. HENSHALL.

BOZEMAN, MONT., July 4.

The FOREST AND STREAM is put to press each week on Tuesday. Correspondence intended for publication should reach us at the latest by Monday, and as much earlier as practicable.

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Once, while fishing Cottonwood rivers, was a pole and not to cut a switch to absent perhaps ten motion at the place pole flopping about line. The river was alternate pools a few there was but a few would expose itself and I could afford thought out in a second the surface and tried it down and it again the shallows, and I bird tried to fly, as sheldrake, but it under. I pulled in resisted. Then can capture it, and if it would be worth what had time to think within about roft. mouth. The bird y to gets its breath, pole. It slowly p always looking back wing, with the line

LOON.

I have seen trout their bodies that look of a loon. Perhaps ducks do, but the Often has the loon interesting one. I in Kansas, and once came down a creek the stranger, ask dropped him. The and prairie chickadee were out of season full of fleas and wo